# State Revolving Fund Loan Programs
Drinking Water, Wastewater, Nonpoint Source

## ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

### CITY OF JEFFERSONVILLE
**SOUTH PUMP STATION, GRAVITY SEWERS AND FORCE MAINS PROJECT**
**STATE REVOLVING FUND PROJECT # WW12 10 26 08**

**DATE: November 09, 2012**

**TARGET PROJECT APPROVAL DATE: December 10, 2012**

I. INTRODUCTION

The above entity has applied to the State Revolving Fund (SRF) Loan Program for a loan to finance all or part of the wastewater project described in the Environmental Assessment (EA) attached to this Finding of No Significant Impact (FNSI). As part of facilities planning requirements, an environmental review has been completed which addresses the project's impacts on the natural and human environment. This review is summarized in the attached EA.

II. PRELIMINARY FINDING OF NO SIGNIFICANT IMPACT (FNSI)

The SRF has evaluated all pertinent environmental information regarding the proposed project and determined that an Environmental Impact Statement is not necessary. Subject to responses received during the 30-day public comment period, and pursuant to Indiana Code 4-4-11, it is our preliminary finding that the construction and operation of the proposed facilities will result in no significant adverse environmental impact. In the absence of significant comments, the attached EA shall serve as the final environmental document.

III. COMMENTS

All interested parties may comment upon the EA/FNSI. Comments must be received at the address below by the target project approval date. Significant comments may prompt a reevaluation of the preliminary FNSI; if appropriate, a new FNSI will be issued for another 30-day public comment period. A final decision to proceed, or not to proceed, with the proposed project shall be effected by finalizing, or not finalizing, the FNSI as appropriate. Comments regarding this document should be sent within 30 days to:

**Max Henschen**
**Senior Environmental Manager**
**State Revolving Fund -- IGCN 1275**
**100 N. Senate Ave.**
**Indianapolis, IN 46204**
**317-232-8623**
**mhensche@ifa.in.gov**

# ENVIRONMENTAL ASSESSMENT

## I. Project Identification

| | |
|---|---|
| Project Name and Address: | **South Pump Station, Gravity Sewers & Force Mains Project**<br>City of Jeffersonville<br>Jeffersonville City Hall<br>500 Quartermaster Court<br>Jeffersonville, IN 47130 |
| SRF Project Number: | WW 12 10 26 08 |
| Authorized Representative: | The Honorable Mike Moore, Mayor |

## II. Project Location

Jeffersonville is in the southeastern portion of Clark County. The proposed project includes a new lift station, gravity sewers, and force mains. The project which will occur in Utica Township in the Jeffersonville, IN-KY USGS quadrangle, Sections 6, 7, 14, 15, 16, 25 and 38 of the Illinois Grant for Clark County; see Figure 4-2.

## III. Project Need and Purpose

Jeffersonville's National Permit Discharge Elimination System Permit requires the city to develop a Long Term Control Plan (LTCP) to address combined sewer overflows (CSOs). Included in this plan are provisions to undertake capital improvements, operational modifications and other improvements between 2010 and 2020 to reduce or eliminate CSOs into Cane Run and the Ohio River.

The city analyzed treatment options to determine the best methods for handling Jeffersonville's current and future wastewater needs, as well as reduce or eliminate CSOs. The city determined that expanding the Downtown Wastewater Treatment Plant (DWWTP) in conjunction with constructing a North WWTP would adequately address all of its wastewater needs, including creating additional capacity for treating combined sewer flow at the DWWTP.

Approximately 30 to 40 percent of the flow from the area northeast of the city will be diverted to the North WWTP, which will allow the DWWTP to handle additional dry and wet weather flows as required by the LTCP.

The North WWTP will be served by five major pump stations from both the existing service area and the future service area. The city evaluated several alternatives that involved transporting flows from major pump stations in the sewer area northeast of the intersection at I-265 /US 62 to the North WWTP.

The major pump stations in this sewer area include: Riverport pump station #2 (RPPS2), Utica pump station #1(UTPS1), Old Stoner pump station (OSPS), Boulder Creek pump station (BCPS), High Meadows pump station I (HMPSI) and Happy Valley pump station (HVPS). Currently, the RPPS#2 receives flow from all of those pump stations, and then pumps that flow to a 15-inch gravity sewer along Middle Road that conveys the flow to the Mill Creek pumping station and then to the DWWTP.

Currently, the RPPS2 receives flows from Riverport pump station #1(RPPS1), UTPS#1, OSPS, BCPS, HMPSI, HVPS, and Gateway pump station (GWPS).

The RPPS2 consists of two submersible pumps each rated at 1,050 gallons per minute (gpm) each and pumps flows through an 8-inch force main. The RPPS2 currently serves the area south and southeast of Salem Noble Road/New Chapel Road intersection and area east and northeast of I-265/US 62. In 2011, the RPPS2 pumped an average daily flow of 350 gpm and a peak daily flow of 1,050 gpm.

The proposed project entails rerouting flows from pump stations BCPS, OSPS, HMPS#1, High Meadows Pump Station II (HMPSII), and Utica Pump Station #2 (UTPS#2) by installing gravity sewers that will convey flows to a new pump station named Lentzier Creek Pump Station (LCPS).

In addition, flow from the RPPS2 will be diverted to the new LCPS through a new 12-inch force main. The LCPS will then pump flow through dual 18-inch force mains to the North WWTP.

The LCPS will consist of two wet wells and a flow splitter manhole. Each wet well will be sized for a peak flow of 3,000 gpm. For the first ten years, only one of the wet wells will be activated; the other would become active based on future flows. The first wet well will contain two submersible pumps each rated at a capacity of 3,000 gpm and an 18-inch force main. The city will install variable frequency drives and a flow meter control and monitor the pumps' operation. The pump station will also have a control building, jib crane and emergency generator.

An 8-inch gravity sewer currently connected to the HMPSII will be rerouted to the new LCPS. An 18-inch gravity sewer currently connected to the OSPS will be rerouted to a proposed 18-inch gravity sewer, which will eliminate the OSPS. That proposed 18-inch gravity sewer will pick up the BCPS and connect to a proposed 24-inch gravity sewer, and that connection will eliminate the BCPS. The proposed 24-inch gravity sewer will then be connected to an existing 30-inch gravity sewer. After approximately 3,000 feet the existing 30-inch gravity sewer will connect to a proposed 30-inch gravity sewer, which will be extended approximately 6,000 feet along Lentzier Creek, where it will connect to the new LCPS. The proposed 30-inch gravity sewer will eliminate HMPSI and UTPS2.

The dual 18-inch force mains will be installed along Lentzier Creek parallel to the proposed 30-inch gravity sewer for approximately 5,000 feet where they will turn northwest towards Old Salem Road. From there the force mains will turn northwest on Old Salem Road for approximately 5,300 feet before they turn southwest on a private road owned by the River Ridge Authority and then north under Lentzier Creek to the North WWTP.

## IV. Project Description

The proposed project includes:

A. Installation of a new 12-inch force main from the RPPS#2 to the proposed LCPS;

B. Installation of 8-inch gravity sewers from the HMPS#1, HMPS#2, and UTPS#2 to the proposed 30-inch gravity sewer that will connect to the LCPS;

C. Installation of an 18-inch gravity sewer, a 24-inch gravity sewer and a 30-inch gravity sewer in series from the BCPS to the proposed LCPS;

D. Construction of the proposed LCPS that will consist of two wet wells, a flow splitter manhole, two submersible pumps rated at 3,000 gpm each with variable frequency drives, flow meter pit, an emergency generator and a Jib crane; and

E. Installation of two 18-inch force mains from LCPS to the North WWTP.

## V. Estimated Project Costs, Affordability and Funding

### A. Selected Plan Estimated Cost Summary

| Construction Components | Costs |
|---|---|
| Lentzier Creek Pump Station | $ 1,687,000 |
| 12-inch Force Main from RPPS2 to LCPS | 888,000 |
| 24-inch & 30-inch Gravity Sewers from BCPS to LCPS | 2,072,600 |
| Dual 18-inch Force Mains | 4,121,000 |
| **Construction Subtotal** | **$8,768,600** |
| Contingencies | 876,900 |
| **Total Estimated Construction Cost** | **$9,645,500** |

| Non-Construction Costs | |
|---|---|
| Construction Administration & Inspection | $ 692,000 |
| Legal & Bond Administration | 41,000 |
| Financial | 27,500 |
| **Non-Construction Subtotal** | **$ 760,500** |
| **Total Estimated Project Cost** | **$ 10,406,000** |

B. Jeffersonville will borrow $10,406,000 from the State Revolving Fund Loan Program through a 20-year loan at a fixed interest rate to be determined at the time of loan closing. Monthly user rates and charges may need to be analyzed to determine if adjustments are required for loan repayment.

## VI. DESCRIPTION OF EVALUATED ALTERNATIVES

A. Several alternatives were evaluated for the major pump stations in the collection system in the area northeast of the US 62/I-265 intersection that will be transporting flows to the North WWTP.

1. "No-Action" Alternative: This alternative was rejected since the city would still be sending flows to the Downtown WWTP, which would continue to discharge combined sewage to the Ohio River.

2. Gravity Sewer to Carry All Flows to the North WWTP Alternative: This alternative was rejected since it would not be feasible to construct a gravity sewer to the North WWTP due to the topography.

3. Pump Station & Force Main Alternative 1 – Installation of a Gravity Sewer from BCPS and Installation of a New Force Main from RPPS#2 to a New LCPS to Carry Flow via One Combined Force Main to the North WWTP: Currently the RPPS#2 receives wastewater from three major pump stations (OSPS, BCPS and RPPS #1) and pumps it to the Mill Creek Pump Station where it is pumped to the Downtown WWTP. In this alternative, this flow would be diverted to the North WWTP, so that the Downtown WWTP would have more capacity to treat combined sewer flows. Since the RPPS#2 is the farthest pumping station from the North WWTP, a 12-inch force main would be installed from the RPPS#2 to the proposed LCPS. The LCPS would also receive flows from HMPS#2 via an 8-inch gravity sewer and the BCPS via a 30-inch gravity line. The LCPS would then pump this flow to the North WWTP for treatment. The OSPS, BCPS, HMPS #1, HMPS#2, and UTPS#2 would be eliminated, as mentioned in Section III above (see Figure 4-1) since they are maintenance intensive and their associated lines would not meet 20-year needs.

   This alternative was rejected since the 24-inch force main would not be able to reach full capacity until future growth occurs at the end of first 10-years of the 20-year planning period. On this basis, the force main would not be able to maintain a minimum scouring velocity and would also have a long detention time, leading to potential odor problems.

4. Pump Station & Force Main Alternative 2 – Installation of a Gravity Sewer from BCPS and Installation of a New Force Main from RPPS#2 to New LCPS to Carry Flow via Dual Force Mains to the North WWTP: This alternative is similar to Alternative 1 with the exception of having two 18-inch force mains installed from LCPS to the North WWTP in lieu of just one large force main (see Figure 4-2). Only one of the 18-inch force mains would be used for the first ten year period after construction, since it would have sufficient capacity to handle those flows and maintain a minimum scouring velocity to reduce odors; after 10 years, when flows increase due to development, the second force main would be put into service. The OSPS, BCPS, HMPS #1, HMPS#2, and UTPS#2 would be eliminated. **This was the selected alternative.**

5. Pump Station & Force Main Alternative 3 - Relocation of BCPS, Upgrading RPPS#2, and Construction of a New LCPS and dual Force Mains to the North WWTP: RPPS #2 would have to be upgraded and supplied with a new 14-inch force main that would discharge to the proposed LCPS. This 14-inch force main would be extended northeast along Utica Pike Road for approximately 10,000 feet and would then turn northwest and be extended along the Old Salem Road for approximately 5,000 feet and connect to the

LCPS (see Figures 4-3 and 4-4 redline). The BCPS would have to be relocated due to the future construction of I-265 corridor. The relocated BCPS would be upgraded to a 550 gpm pump station that would have a 10-inch force main extending southeast for approximately 3,800 feet where it would discharge to the LCPS. In addition, the HMPS#1, HMPS#2, and UTPS#2 would have to be renovated due to frequent maintenance problems, and several pump stations would have to be constructed to serve the future service area. The OSPS would be eliminated. This alternative was rejected due to high cost.

Figure 4-4 also illustrates another alternative route denoted by a yellow line. This alternative route would not include the construction of the LCPS or the gravity sewer that would have eliminated the problematic five pumping stations. In addition, the city would have to expand and/or replace the RPPS #2 to handle the increased flow from the service area south and south east of Salem Road/New Chapel Road intersection and the service area east and northeast of I-265/US 62 intersection that would have been served by the proposed LCPS. Expanding the RPPS#2 would require additional land that the city would have to negotiate with the Port of Indiana for or relocate the pump station to another site. This would cost approximately $1,387,000, not including land acquisition. The city would also have to replace all five of the problematic pump stations and eventually expand them to address 20 year needs. Therefore on a cost-effectiveness basis the alternative route was rejected.

6. Pump Station & Force Main Alternative 1 – Two Stage Pumping and Expansion of BCPS to Collect Wastewater from OSPS and RPPS#2 along with the Installation of a New Force Main to the North WWTP: This alternative was rejected due to cost, since it involves expansion of the BCPS and construction of the LCPS.

## VII. Environmental Impacts of the Feasible Alternatives

### A. Direct Impacts of Construction and Operation

Undisturbed/Disturbed Land: A significant portion of the proposed routes (nearly two miles) will be constructed in undisturbed areas, including grassland not currently being farmed, wetlands and riparian areas. An archaeological survey was performed and did not find significant archaeological resources.

Structural Resources (Figure 5-1): Construction and operation of the project will not alter, demolish or remove historic properties. If any visual or audible impacts to historic properties occur, they will be temporary and will not alter the characteristics that qualify such properties for inclusion in or eligibility for the National Register of Historic Places. The SRF's finding pursuant to the Section 106 of the national Historic Preservation Act is: "no historic properties affected."

Plants and Animals: Portions of the project will be constructed in riparian areas along streams. Two species of federally endangered bat, the gray and the Indiana bat, are known to inhabit the area. Per the September 2010 Enclosure 9 Environmental Protection Provisions relating to use of former Indiana Army Ammunition Plant property, trees suitable for bat summer roosting habitat shall not be disturbed between April 1 and October 1.

Prime Farmland: The proposed project will cause an indirect conversion of 25.026 acres of prime/unique farmland.

Wetlands (Figure 5-2): The proposed project will impact Lentzier Creek, which is a riverine wetland. Wetland delineations were performed to further clarify impacts, and the proposed lines have been routed to largely avoid other wetlands.

100-Year Floodplain (Figure 5-2): Portions of the proposed project will be constructed within the 100-year floodplain.

Surface Waters (Figures 5-2): The proposed project will require numerous stream crossings, all of which will be directionally drilled. The crossing locations are illustrated on most of the graphics.

The proposed projects will not adversely affect waters of high quality listed in 327 IAC 2-1.3-3, exceptional use streams listed in 327 IAC 2-1-11(b), or Natural, Scenic and Recreational Rivers and Streams listed in 312 IAC 7-(2), Salmonid Streams listed in 327 IAC 2-1.5-5(a)(3), or waters on the Outstanding Rivers list.

The "Environmental Protection Provisions" document associated with the transfer of former INAAP land between River Ridge and Jeffersonville states "any disturbance of forest cover within 100 feet of a perennial stream or within 50 feet of an intermittent stream is prohibited". Only a small length of force main (i.e., the downstream end of the force main, which discharges to the North WWTP) will be installed on the River Ridge property which was former INAAP land. Since portions of force mains located at stream crossings will be directionally drilled, negative impacts to forest cover are not anticipated, per the requirements of the Environmental Protection Provision.

Groundwater: Construction of the proposed project will not affect groundwater quality.

Air Quality: Dust and noise will be produced during construction activities.

Open Space and Recreational Opportunities: The proposed project's construction and operation will neither create nor destroy open space and recreational opportunities.

Lake Michigan Coastal Program: The proposed project will not affect the Lake Michigan Coastal Zone.

National Natural Landmarks: The construction and operation of the proposed project will not affect National Natural Landmarks.

## B. Indirect Impacts

The city's Preliminary Engineering Report (PER) states: *The City of Jeffersonville, through the authority of its council, planning commission or other means, will ensure that future development, as well as future collection system or treatment works projects connecting to SRF-funded facilities will not adversely affect wetlands, wooded areas, steep slopes, archaeological/historical/ structural resources or other sensitive environmental resources. The City will require new development and treatment works projects to be constructed within the guidelines of the U.S. Fish and Wildlife Service, IDNR, IDEM, and other environmental review authorities.*

## C. Comments from Environmental Review Authorities

The Indiana Department of Natural Resources (IDNR) Division of Historic Preservation and Archaeology, in correspondence dated September 24, 2012, stated:

> *Pursuant to IC 13-18-21 and 327 IAC 14 and Section 106 of the National Historic Preservation Act (16 U.S.C. §470f) and 36 C.F.R. Part 800, the Indiana State Historic Preservation Officer ("Indiana SHPO") is conducting an analysis of the materials dated and received by the Indiana SHPO on August 31, 2012, for the above indicated project in Jeffersonville, Utica Township, Clark County, Indiana.*
>
> *Based on our analysis, it has been determined that no historic properties will be altered, demolished, or removed by the proposed project. In terms of archaeology, we concur with the archaeological report that sites 12C1973, 12C1974, and 12C1979 do not appear eligible for inclusion in the National Register of Historic Places. There are several sites in the vicinity of the proposed project; however, based on the results of the archaeological report, no further archaeological investigations are necessary for the project.*
>
> *If any archaeological artifacts, features, or human remains are uncovered during construction, state law (Indiana Code 14-21-1-27 & 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days.... Be advised that adherence to Indiana Code 14-21-1-27 and 29 does not obviate the need to adhere to applicable federal statutes and regulations.*

The Natural Resources Conservation Service, in correspondence dated May 31, 2012 stated that "*The project to construct a new pump station and install new gravity sewer and force main in the City of Jeffersonville, Clark County, Indiana, as stated in your letter of April 17, 2012, will cause an indirect conversion of prime farmland.*"

The project as originally presented to the SRF proposed that all stream crossings would be directionally drilled. In correspondence dated June 11, 2012, to the wetland delineators commenting on the U.S. Corps of Engineers 401 wetland permit, the U.S. Fish and Wildlife Service (FWS) cautioned that stream crossings should be directionally drilled, and that wetlands should be avoided; cautions regarding karst areas and endangered species were also mentioned. Further project review by the SRF and the FWS led to questions about the project's routing and stream crossing impacts.

To evaluate the impacts of the project and to clarify the number and type of stream crossings, an FWS biologist and an IDNR Environmental Biologist met with a representative of the city, the engineering consultants, and the wetland delineators on September 28, 2012, to tour the project area.

Following the field visit, the FWS, in correspondence dated October 3, 2012, expressed very serious concerns about the proposed route, noting that alternative routes were apparently not considered, saying that *a long sewer line route in the riparian zone would be the last choice, only when other routes are not available, and 8 excavated stream crossings in an approximate 1 mile stream reach constitutes excessive stream impacts. We question whether excavated crossings can be limited to a 5 foot wide disturbance with at all crossing sites..... The applicant should provide documentation as to why routes similar to* [routes illustrated by the FWS in its correspondence] *are not available or is cost-prohibitive. If less damaging routes are not available, the FWS recommends directional boring for perennial and large*

*intermittent streams....If it is demonstrated that the current route and one or more excavated crossings are unavoidable, we recommend the following mitigation measures:*

- *Install the sewer line at least 25 feet from the top of the stream bank except at unavoidable stream crossings.*
- *Avoid or minimize removal of mature native trees for construction and equipment access.*
- *Avoid or minimize wetland disturbance. Wetland impacts may require compensatory mitigation.*
- *Avoid work in Lentzier Creek during the fish spawning season (April 1 – June 30.*
- *Time all work in the stream channel to coincide with low flow conditions.*
- *Revegetate all disturbed riparian areas with native vegetation.*
- *Our previous karst recommendations* (from the June 11 response to the wetland delineators) *are still appropriate.*
- *Mitigate for stream and riparian impacts by restoring or enhancing an equal length of the riparian zone of Lentzier Creek. Mitigation should include plantings of native trees and shrubs in the disturbed area, on the stream bank where needed, and in other stream reaches if necessary.*

Noting that part of the project occurs on former INAAP property and that INAAP environmental covenants proscribe certain activities, the FWS stated: *The referenced INAAP covenants state that disturbance of forest cover within 100 feet of a perennial stream or surface karst feature, or 50 feet of an intermittent stream, is prohibited. The project design includes one crossing of Lentzier Creek on former INAAP property, using directional drilling. The covenant requirements can be met by avoiding forest disturbance within 100 feet of the stream corridor at that location and by avoiding disturbance within 100 feet of karst features on former INAAP property.*

The FWS noted that there are no records of the federally endangered Indiana bat near the site, the FWS wrote: *The project will not eliminate enough habitat to affect his species, but to avoid the potential for incidental take from removal of an occupied roost tree we recommend that tree-clearing be avoided during the period April 1 – September 30.*

The FWS also noted that the federally endangered gray bat occurs in the area and *it is likely that they are foraging in suitable habitat along some reaches of Lentzier Creek. A project which substantially alters the nature of the riparian foraging habitat or the stream's capacity to produce insect forage would result in a "take" of gray bats by reducing a colony's forage base. In this case...we do not believe that the project impacts will result in take, if the seasonal restriction for Indiana bats is implemented and if best management practices are used to prevent erosion and additional stream siltation before and after construction. We strongly recommend replacement of lost riparian trees to ensure that the foraging habitat is not diminished. If the aforementioned best management practices are implemented we concur that the project is not likely to adversely affect the gray bat...*

The city replied to the FWS concerns, as well as the IDNR Environmental Unit concerns (below), in correspondence dated November 5, 2012, noting that only the selected alternative is cost-effective and addresses the needs of the city. The city listed mitigation measures to minimize impacts at directionally drilled stream crossings. The city stated that *in areas where trees/shrubs have been cleared along the stream to construct the temporary crossing, three-*

*gallon containerized native trees/shrubs will be replanted at a rate of 60 trees/shrubs per acre.*

The FWS, in electronic correspondence dated November 8, 2012, stated: *I have to continue to recommend the least environmentally damaging alternative. If that is determined to be infeasible due to cost, I agree that the revised stream crossing method (directional drilling) would be a great improvement over the previous proposal of several excavated crossings. Impacts to the Lentzier Creek floodplain for access and installation of the sewer lines would have to be mitigated. The Corps of Engineers, IDEM and IDNR will make the final decision on how much mitigation is needed, but my recommendation would be at a minimum to fully replace all trees to be removed with native species suitable for riparian areas (3:1 acreage ratio for wetland trees). To have meaningful mitigation they should plant native trees and shrubs wherever needed and feasible in disturbed areas along the entire route segment following Lentzier Creek at standard reforestation rates. I have no way of knowing how the proposed 60 containerized trees/acre would compare to how many trees would be removed but I expect that would not be adequate. I was informed that IDNR is not likely to approve that planting rate under the floodway permit because it is inconsistent with their guidelines for floodway mitigation.*

The IDNR Environmental Unit, in correspondence dated October 1, 2012, stated:

> *Our agency offers the following comments for your information and in accordance with the National Environmental Policy Act of 1969.*
>
> *If our agency has regulatory jurisdiction over the project, the recommendations contained in this letter may become requirements of any permit issued. If we do not have permitting authority, all recommendations are voluntary.*
>
> *This proposal will require the formal approval for construction in a floodway under the Flood Control Act, IC 14-28-1. Please submit a copy of this letter with the permit application.*
>
> *The Natural Heritage Program's data have been checked. To date, no plant or animal species listed as state or federally threatened, endangered, or rare have been reported to occur in the project vicinity.*
>
> *The utility lines, as proposed, will likely result in significant impacts to fish, wildlife and botanical resources. We highly recommend seeking alternative routes that avoid clearing undisturbed bottomland forest habitat. Alternatives such as placing the lines adjacent to existing roads, and in previously-disturbed areas, should be evaluated. As project plans develop, we recommend submitting more information for further review, if needed. With respect to the current proposal, the Division concurs with the USFWS comments and recommendations made in their July 11, 2012, letter.*
>
> *Avoid and minimize impacts to fish, wildlife, and botanical resources to the greatest extent possible, and compensate for impacts. The following are recommendations that address potential impacts identified in the proposed project area:*
>
> A. *Utility Stream Crossings*
> *We recommend that all creek or stream crossings be done using a trenchless method. If the open-trench method is necessary and the only feasible option at any of the planned stream crossings due to the site conditions, then the following measures*

*should be implemented.*

1. *Any open-trench stream crossing should be timed to coincide with the low-water time of year (typically mid- to late-summer).*
2. *Restore disturbed streambanks using bioengineering bank stabilization methods and revegetate disturbed banks with native trees, shrubs and herbaceous plants. Stream bank slopes after project completion should be restored to stable-slope steepness (not steeper than 2:1).*
3. *The cleared width through any forested area should be the minimum needed to install the line and no wider than 20 feet wide through the forested area to allow the canopy to close over the line.*
4. *Use graded stone or riprap to protect the section of trench below the normal water level from scour or erosion (any stone or riprap fill in the streambed should remain at the existing streambed level to avoid creating a fish passage obstruction).*

B. *Bank Stabilization*

*We recommend that any eroded stream bank stabilization be done using bioengineered techniques. Information about bioengineering techniques can be found at http://www.in.gov/legislative/iac/20120404-IR-312120154NRA.xml.pdf. Also the following is a USDA/NRCS document that outlines many different bioengineering techniques for streambank stabilization: http://directives.sc.egov.usda.gov/17553.wba (Choose Handbooks; Title 210 Engineering; National Engineering Handbook; Part 650 Engineering Field Handbook. Choose Chapter 16 from next window).*

*Riprap can be used for streambank toe protection and, where necessary, extended up to the ordinary high water mark (ohwm). Any areas of riprap placed on the banks between the normal water level and the ohwm should be planted with live stakes. From the ohwm to the top of the bank, turf reinforcement mats (type 5 permanent erosion control blankets) seeded with native grasses, sedges and wildflowers, with woody rooting vegetation as needed, or a similar suitable type of bioengineered bank stabilization method should be used.*

C. *Habitat Impacts*

*Any habitat impacted, whether wetland or non-wetland, within the floodway will require mitigation. Impacts to non-wetland forest under one (1) acre should be mitigated at a 1:1 ratio, while impacts to non-wetland forest over one (1) acre should be mitigated at a minimum 2:1 ratio. Impacts to wetlands should be mitigated at the appropriate ratio as well.*

*Mitigation for impacts to non-wetland forest in the floodway will be required in the form of revegetation of the cleared construction corridor, with 5-gallon container-grown native hardwood trees, to within 10' of each side of the utility line. The permanently-cleared width through the forested riparian corridor should be no more than 20' wide through the forested riparian corridor to allow the canopy to close over the line. Any permanent or temporary impacts to existing forested floodway habitat necessary for construction will be counted as an impact requiring mitigation. The tree planting density for container-grown trees is 302 per acre spaced 12' apart. The herbaceous layer within the revegetation zone will be a seed mix of native species containing at least ten different species including native grasses, sedge and forbs. The DNR's Floodway Habitat Mitigation guidelines can be found online at:*

http://www.in.gov/legislative/iac/20120801-IR-312120434NRA.xml.pdf.

*The additional measures listed below should be implemented to avoid, minimize, or compensate for impacts to fish, wildlife, and botanical resources:*

1. *Revegetate all bare and disturbed areas with a mixture of native grasses, sedges, wildflowers, and native shrub and hardwood tree species as soon as possible upon completion. Do not use any varieties of Tall Fescue or other non-native plants (e.g. crown-vetch).*
2. *Minimize and contain within the project limits inchannel disturbance and the clearing of trees and brush.*
3. *Do not work in the waterway from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife.*
4. *Do not cut any trees suitable for Indiana bat roosting (greater than 3 inches dbh, living or dead, with loose hanging bark) from April 1 through September 30.*
5. *Use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids.*
6. *Plant native hardwood trees along the top of the bank and right-of-way to replace the vegetation destroyed during construction.*
7. *Post "Do Not Mow or Spray" signs along the right-of-way.*
8. *Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.*
9. *Seed and protect disturbed stream banks that are 3:1 or steeper with heavy-duty biodegradable erosion control blankets (follow manufacturer's recommendation for installation); seed and apply mulch on all other disturbed areas.*

## VIII. Mitigation Measures

The city's PER lists the following mitigation measures:

A. *Implement appropriate temporary erosion control measures (straw bale barriers, silt fencing, etc.) to prevent soil runoff leaving the construction site.*

B. *Implement all applicable water pollution control measures specified in the Indiana State Highway Standard Specifications (latest version).*

C. *The appropriate measures will be taken to prevent siltation of nearby surface and underground water resources with dewatering flows or construction related runoff.*

D. *Maintain all equipment to manufacturers' specifications to minimize construction noise, and where appropriate utilize temporary noise barriers to reduce noise levels.*

E. *Minimize fugitive dust from construction activities by wetting the construction area periodically and constructing wind barriers or treating with chemical stabilizers if necessary.*

F. *The open burning of debris (i.e., trees and shrubs) shall not be allowed unless a permit is obtained from the Indiana State Air Pollution Control Division for such activities.*

G. *Cutback asphalt or asphalt emulsion containing more than seven percent oil distillable shall not be used during the months April through October pursuant to 326 IAC 805 Asphalt Paving Rule.*

H. *The contractor shall abide by the rules governing asbestos notification, handling, disposal and contractor licensing should such material be encountered.*

I. *Construction waste shall be disposed of by the contractor at an acceptable waste disposal landfill. If contaminated soils (including PCBs) are discovered during the project, they may be subject to disposal as either special or hazardous waste as determined by the* [IDEM] *Office of Solid and Hazardous Waste Management.*

J. *Mitigation measures cited in comment letters from the Indiana Department of Natural Resources and the U.S. Fish and Wildlife Service will be implemented.*

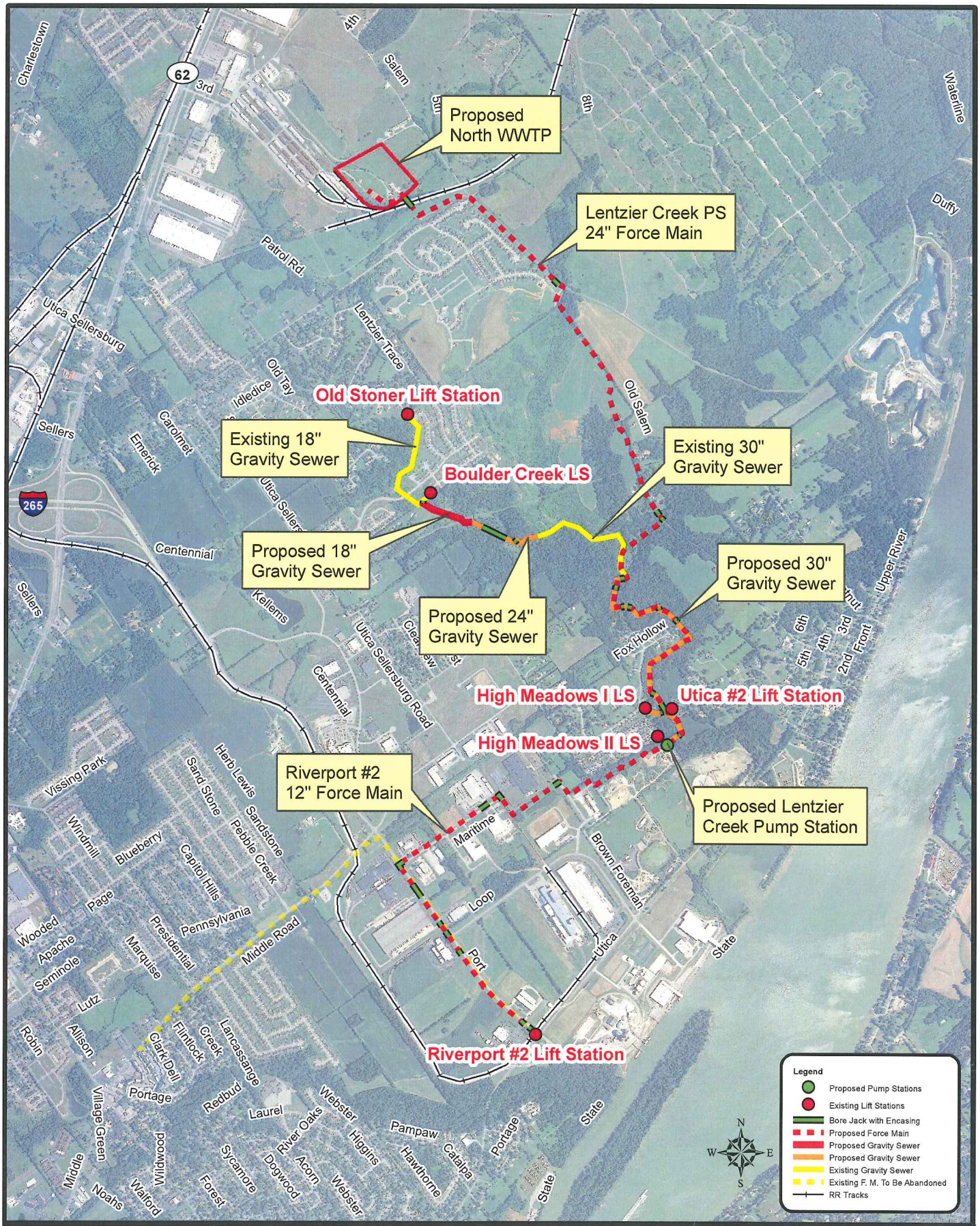
K. *Construction activities should not impact ozone, airborne pollutants or other current or future air quality concerns.*

L. *Construction activities will be limited to normal working hours to minimize disturbance to the surrounding neighborhoods.*

M. *Erosion control measures are essential when working near wetlands. Dewatering flows shall not be directly discharged to streams or wetlands. A settling basin or some other effective mitigation measure to reduce suspended solids will be the preferred mitigation measure. Additionally, mitigation measures cited in letters from INDNR and USFWS shall be implemented.*

## IX. PUBLIC PARTICIPATION

Public hearings were held in the City Council Chambers on May 30, 2012 and August 16, 2012 at 6:00 p.m. to discuss the Preliminary Engineering Report (PER), from which this document is derived. Members of the public did not ask questions, and no written comments were submitted to the city in the 5-day post-hearing period.




Preliminary Engineering Report
South Pump Stations
City of Jeffersonville, Indiana

0 1,250 2,500 5,000 Feet

# Figure 4-1
## Pump Station & Force Main Alternative 1
## Jeffersonville, Indiana

Revised 11/01/2012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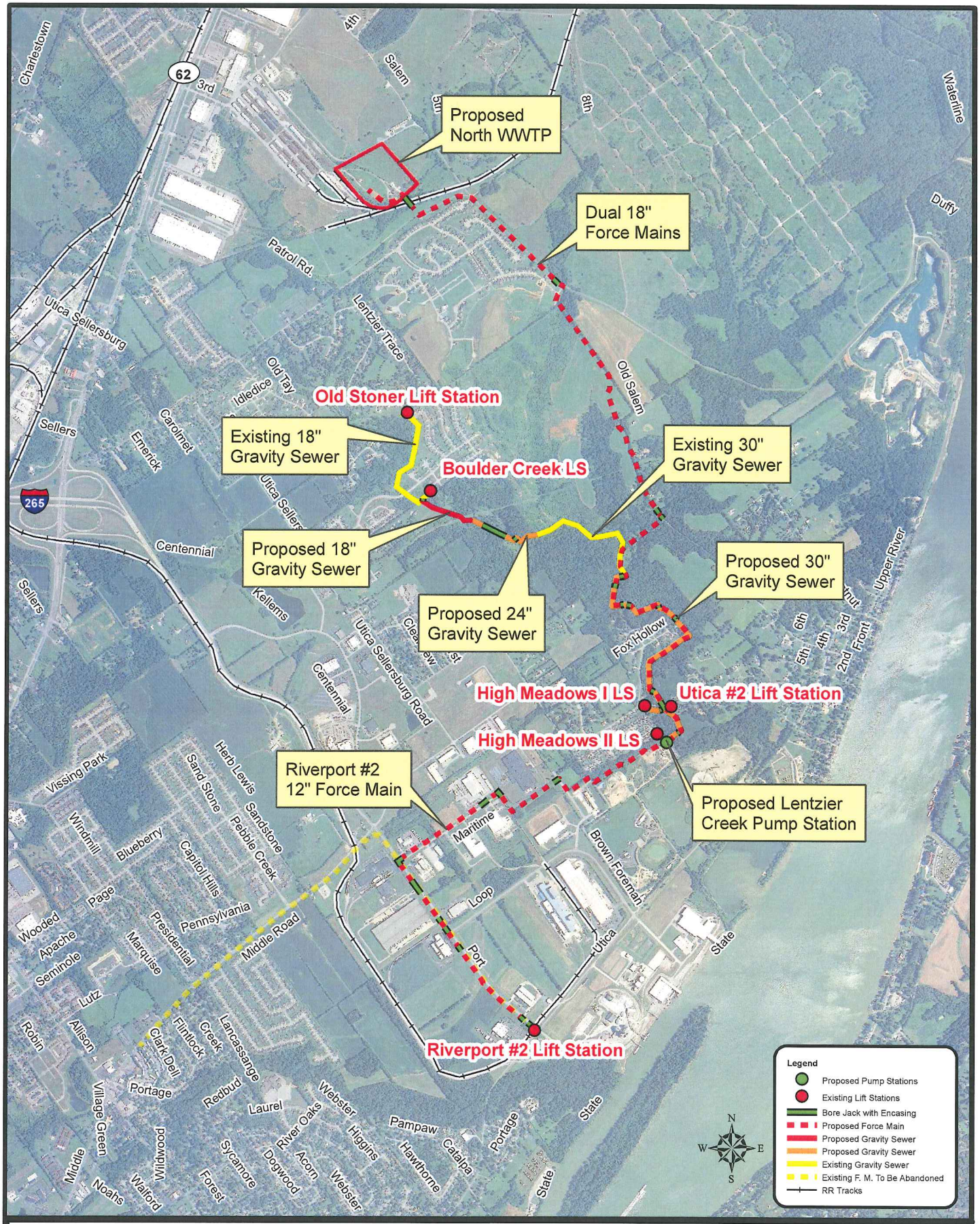


Preliminary Engineering Report
South Pump Stations
City of Jeffersonville, Indiana

0 1,250 2,500 5,000 Feet

# Figure 4-2
## Pump Station & Force Main Alternative 2
## Jeffersonville, Indiana

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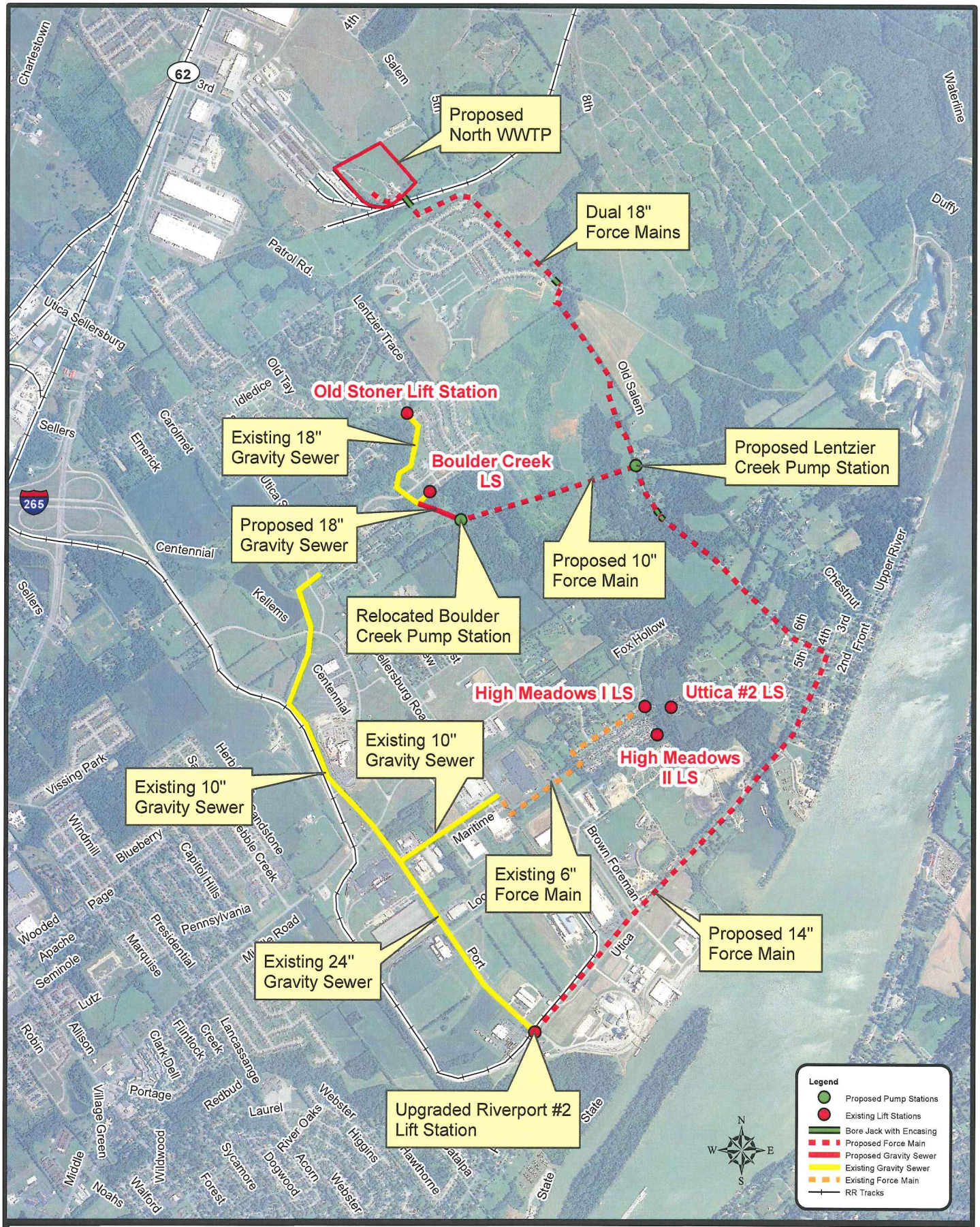


Preliminary Engineering Report
South Pump Stations
City of Jeffersonville, Indiana

0 1,250 2,500 5,000 Feet

**Figure 4-3**
**Pump Station & Force Main Alternative 3**
**Jeffersonville, Indiana**

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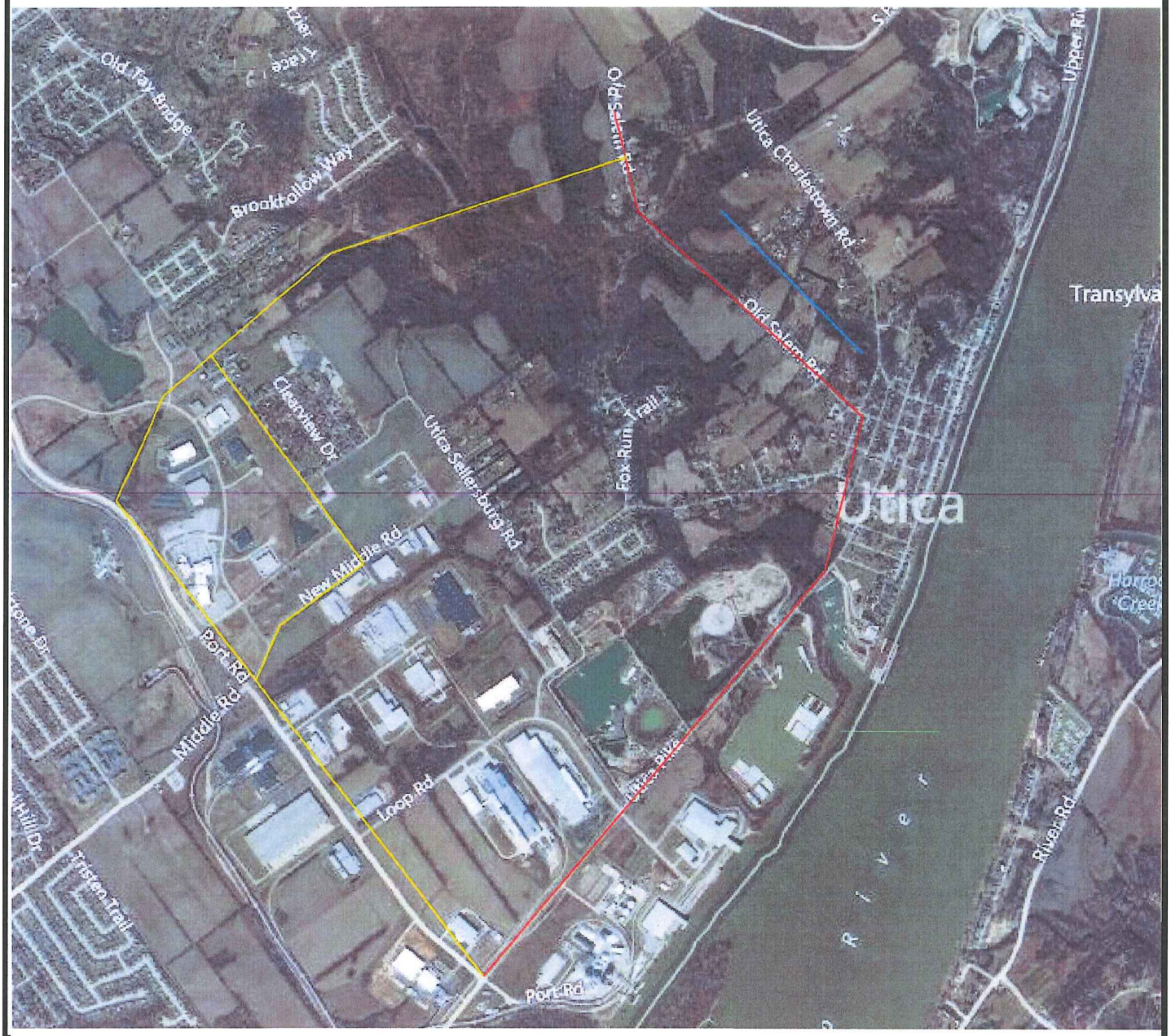


**Routes suggested by the U.S. Fish and Wildlife Service in project comments dated October 3, 2012**

N
W E
S

Preliminary Engineering Report
South Pump Stations
City of Jeffersonville, Indiana

0 160 320 640 Feet

**Figure 4-4**
**Pump Station & Force Main Alternative 3: Alternative Routes for Riverport #2 Pump Station Force Main**
**Jeffersonville, Indiana**

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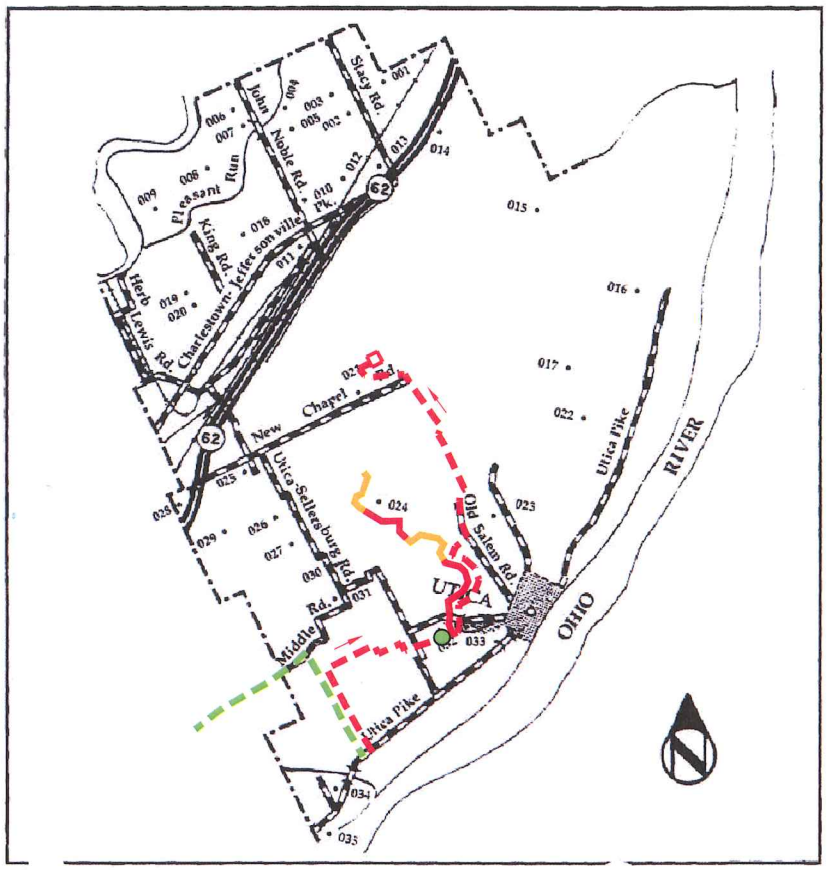
# Utica Township (45001-035)

Legend

- Proposed Gravity Sewer
- Proposed Force Main
- Existing Gravity Sewer
- Existing Force Main To Be Removed
- Proposed Lentzier Creek P.S.




Utica Township was formed from sections of Charlestown and Jeffersonville Townships and is bordered by both of the townships as well as the Ohio River. Utica Township presently has three small communities, a section of a military reserve and large tracts of farmland.

Utica Township was formally organized on November 7, 1831. It was named for the town of Utica, which had been in existence for just over fifteen years preceding the township's formation. People began settling in Utica Township shortly after the first ferries began operation across the Ohio River. There was a ferry operating in the town of Utica as early as 1794. As a result, many of the early settlers of the township first passed through the town.

One of the early pioneer families that settled in Utica Township was the Bottorffs. The Bottorff family first came to Utica Township in 1815 and soon settled throughout Clark County. Today, the Bottorff family is still well represented in Utica Township. Three of the family's farms (45006, 45008, 45009) remain in the township.

Pioneer families like the Bottorffs depended on roads to travel throughout the township. The Jeffersonville-Charlestown Road was first laid out in 1810 and passed through Utica Township. Soon, other roads followed. With the construction of new roads, villages and towns began to develop including Utica, Watson and Prather. Utica is the largest town in Utica Township and was also the first one to be formed. Founded at the site of an eighteenth-century ferry, Utica was laid out in 1816 and named for an early settler's hometown of Utica, New York.

The next town to be established within the boundaries of Utica Township was Watson. Watson started out as a company town for workers employed by the Louisville Cement Company. In 1871, the company built a cement



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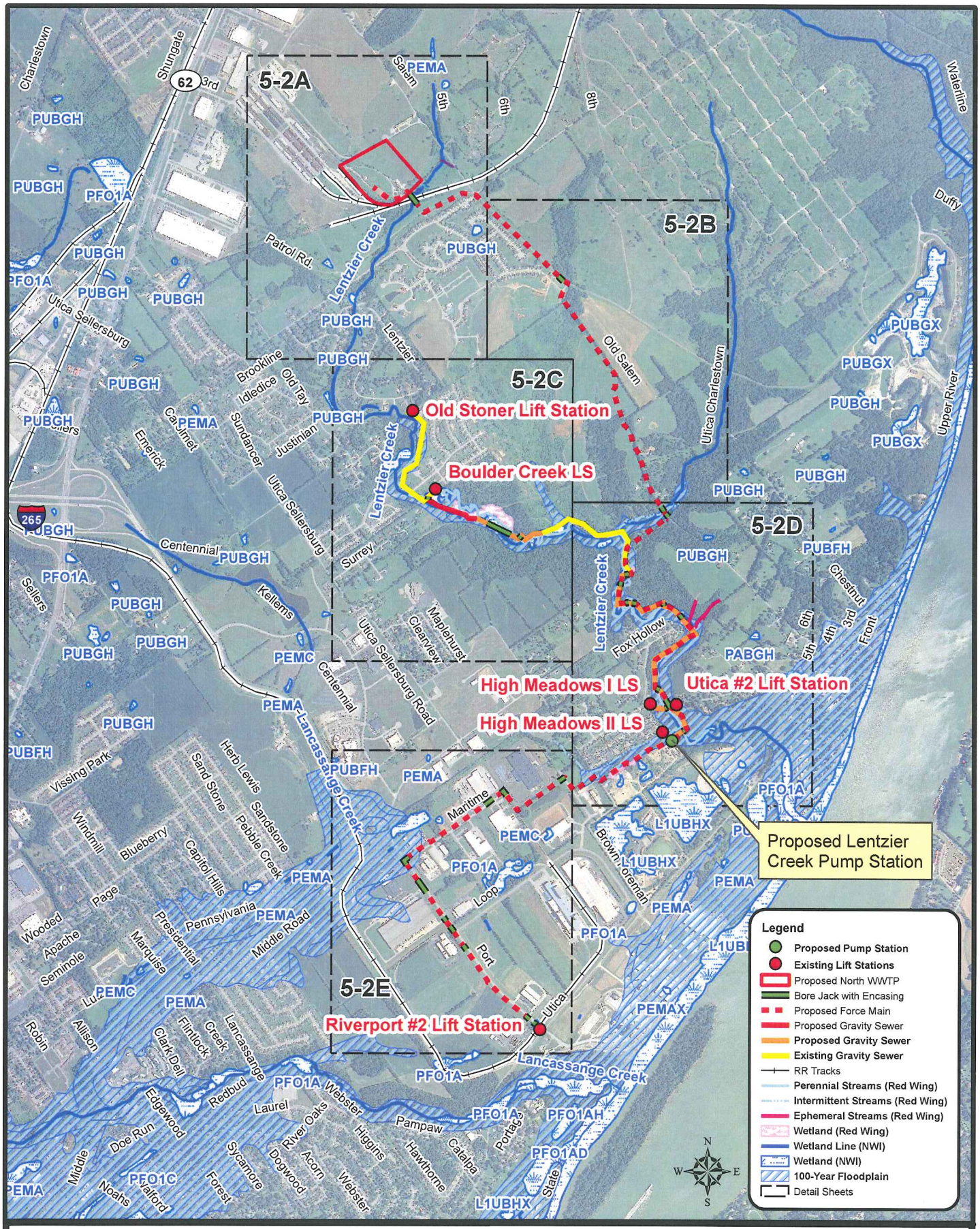
**FIGURE 5-1: from Clark County Interim Report Indiana Historic Sites and Structures Inventory**




Preliminary Engineering Report
South Pump Stations
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0 1,250 2,500 5,000 Feet

**Figure 5-2**
**National Wetland Inventory, Hydrology & 100-Year Floodplain Map**
**Jeffersonville, Indiana**

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